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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,082	04/21/2005	Takashi Ochi	IPE-056	8287

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EXAMINER	
SYKES, ALTREV C	
ART UNIT	PAPER NUMBER
1794	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/532,082	OCHI ET AL.	
	Examiner	Art Unit	
	ALTREV C. SYKES	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *October 24, 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4,7,8,10-12,14-21,23,24,27-34,39-41,46,47,53 and 56-59* is/are pending in the application.

4a) Of the above claim(s) *14,15,20,21,23,24,27-34,39-41,46 and 47* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4,7,8,10-12,16-19,53,56-59* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *20081202*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Examiner acknowledges the amendment to the claims filed October 24, 2008. Claim 1 has been amended to include the limitation of claim 52. Claims 52, 54, and 55 have been cancelled. New claims 57-59 have been added. Claims 1, 4, 7, 8, 10-12, 16-19, 53, and 56-59 are pending in the application.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 4, 7, 8, 10-12, 16-19, 52-56 have been considered but are moot in view of the new ground(s) of rejection necessitated by the amendment adding limitations to claim 1.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 4, 7, 8, 11, 12, 16, 17, and 53 are rejected under 35 U.S.C. 102(b) as being anticipated by Shimoyama et al. (JP 2004-256983).

Regarding claims 1 and 53, Shimoyama et al. discloses an artificial leather of aggregate nanofibers wherein single fiber fineness by number average is in the range of $1.3 * 10^{-5}$ to $3.2 * 10^{-4}$ dtex of 60% or more. (See Abstract and [0010]) Additionally, Shimoyama et al. discloses the single yarn fineness may be $8.0 * 10^{-9}$ to $5.0 * 10^{-4}$ dtex. (See [0014]) The nanofibers may be of a thermoplastic polymer. (See [0013])

Shimoyama et al. the nanofibers have a morphology of a filament-yarn. (See [0014]) Therefore, examiner notes that the overlapping range as disclosed by Shimoyama et al. anticipates the range claimed by applicant because the lower end point of $1.3* 10^{-5}$ dtex would fall within applicants claimed range of $1* 10^{-7}$ to $2 *10^{-4}$ dtex and $1* 10^{-7}$ to $1 *10^{-4}$ dtex.

Regarding claim 4, Shimoyama et al. discloses it is preferred that the single-yarn-fineness ratio from which single yarn diameter difference goes into the width of 30 nm is not less than 50%. (See [0021])

Regarding claim 7, Shimoyama et al. discloses the thermoplastic polymer may be polyester, polyamide, or polyolefin. (See [0013])

Regarding claim 8, Shimoyama et al. discloses the nanofibers aggregate can improve the dynamic physical properties of textiles if it is 1 or more cN/dtex. (see [0042])

Regarding claims 11 and 16, Shimoyama et al. discloses the aggregate may be made of a polymer containing additives such as particles, fire retardant, and a spray for preventing static electricity. (See [0013])

Regarding claims 12 and 17, Shimoyama et al. discloses the artificial leather can be considered as a nonwoven fabric or woven knitted good. (See [0045])

Claim Rejections - 35 USC § 102/103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claim 10 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Shimoyama et al. (JP 2004-256983)

Regarding claim 10, Shimoyama et al. teaches the claimed invention above but fails to teach a rate of elongation at absorbing water of 5% or higher in the longitudinal direction of the yarn. It is reasonable to presume that rate of elongation is inherent to Shimoyama et al. Support for said presumption is found in the use of like materials and/or like methods (i.e. similar thermoplastic polymers, nanofibers having single fiber fineness in the claimed range of applicant produced using melt spinning, needlepunching, etc.) which would result in the claimed property. Additionally, Shimoyama et al. discloses that a polymer alloy melt may be used. (See [0025]-[0026]) Shimoyama et al. discloses the aggregates can be produced by carrying out melt spinning and kneading of the polymer using a extrusion kneading machine. (See [0030], [0032] and [0035]) Shimoyama et al. also discloses by performing needle punching, orientation can be made to increase the textiles which constitute a nonwoven fabric and the grace on the surface of artificial leather. (See [0044]) Therefore, examiner has reason to believe that the aggregate of nanofibers disclosed by Shimoyama et al. are substantially similar in component make-up as well as substantially similar in method of making, thereby providing for the orientation as claimed by applicant. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed properties would inherently have been present once the Shimoyama et al. product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 56 and 58-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimoyama et al. (JP 2004-256983).

Regarding claim 56, Shimoyama et al. fail to teach a fibrous material wherein mass per unit area of the fiber is in a range from 20 to 2000 g/m^2. It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the mass per unit area since it has been held that, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). The burden is upon the Applicant to demonstrate that the claimed mass per unit area is critical and has unexpected results. In the present invention, one would have been motivated to optimize the mass per unit area motivated by the desire to control

the weight of the final product comprising the super-thin textiles. (See [0009]) Therefore, examiner has reason to believe that modifying the mass per unit area of the fibrous material would have been well within the ordinary skill in the art motivated by expected success to tailor articles for end product use.

Regarding claims 58 and 59, Shimoyama et al. fail to teach the aggregate of nanofibers has an orientation that extends in one dimension over a definite length or has an orientation that extends in one dimension for at least several meters. It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the orientation since it has been held that, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). The burden is upon the Applicant to demonstrate that the claimed orientation is critical and has unexpected results. In the present invention, one would have been motivated to optimize the orientation motivated by the desire to control the feel of the artificial leather. (See Abstract) Additionally, Shimoyama et al. discloses that a polymer alloy melt may be used. (See [0025]-[0026]) Shimoyama et al. discloses the aggregates can be produced by carrying out melt spinning and kneading of the polymer using a extrusion kneading machine. (See [0030], [0032] and [0035]) Shimoyama et al. also discloses by performing needle punching, orientation can be made to increase the textiles which constitute a nonwoven fabric and the grace on the surface of artificial leather. (See [0044]) Further, it is noted that applicant discloses the polymer alloy fiber may be a long fiber made by melt spinning and drawing. (See pg. 26, lines 6-7)

Therefore, examiner has reason to believe that the aggregate of nanofibers disclosed by Shimoyama et al. are substantially similar in component make-up as well as substantially similar in method of making, thereby providing for the orientation as claimed by applicant.

10. Claims 18, 19 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimoyama et al. (JP 2004-256983) as set forth above for claim 1, in view of Tanaka et al. (US 2001/0053646)

Regarding claims 18 and 19, Shimoyama et al. discloses all of the claim limitations as set forth above, but the reference does not explicitly disclose the fibrous material is a laminated nonwoven fabric or that the fibrous material is a fibrous article.

Tanaka et al. discloses hollow fibers which are light, and have a favorable hand with both a dry and bulky feel. (See [0002]) The fibers are used to provide articles such as artificial leather and fiber laminates with other synthetic fibers. In addition, final products comprising them include clothing, living materials, industrial materials, and medical articles. (See [0041]) The fibers also comprise a thermoplastic polymer which may contain additives. (See [0018]-[0020] and [0056])

As Shimoyama et al. and Tanaka et al. are both directed to artificial leathers, it would have been obvious to one of ordinary skill in the art at the time of the invention motivated by expected success to utilize the fiber structure as taught by Tanaka et al. in conjunction with the fibrous material as disclosed by Shimoyama et al. for the purpose of producing favorable hand in the final fiber laminate product. (See [0002])

Regarding claim 57, Shimoyama et al. discloses that the thermoplastic polymer may be polyester, polyamide, or polyolefin. (See [0013]) As noted by Tanaka et al. polyolefinic polymers for use in making artificial leather include polyphenylene sulfide. (See [0093]) Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention motivated by expected success of controlling the feel of the artificial leather to utilize polyphenylene sulfide as the thermoplastic polymer as recited in the claimed invention.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under

37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALTREV C. SYKES whose telephone number is (571)270-3162. The examiner can normally be reached on Monday-Thursday, 8AM-5PM EST, alt Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on 571-272-1254. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ACS/
1/9/09

/Norca L. Torres-Velazquez/
Primary Examiner, Art Unit 1794